Design and Simulation of Single-Phase Full Bridge Inverter with RL Load

https://esim.fossee.in/circuit-simulation-project

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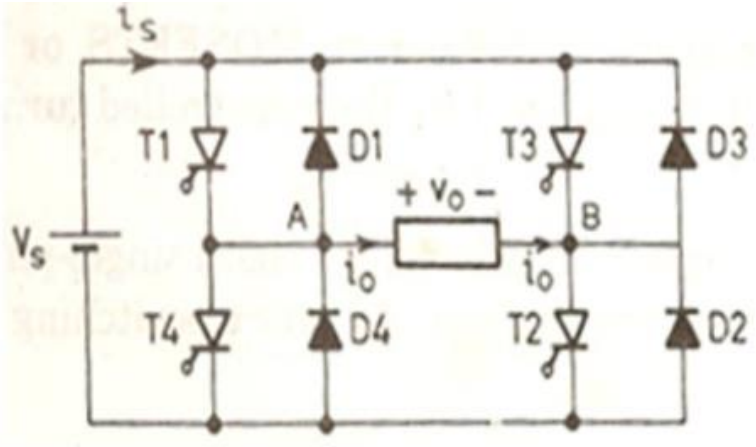
Title of the circuit : Design and Simulation of Single-Phase Full Bridge Inverter with RL Load

Problem Statement : Develop a simulation model for a Single-Phase Full Bridge Inverter with an RL load to provide a virtual experimentation environment. This model aims to help students and researchers understand the working principles of DC to AC conversion and the behavior of reactive loads in power electronics systems.

Theory/Description :

This project focuses on simulating a full-bridge inverter that uses Power BJTs as switching elements in an H-bridge topology. Controlled by SPWM signals, the inverter converts DC input into AC output, driving an RL load. The use of Power BJTs emphasizes their switching characteristics and suitability for inverter applications. The simulation highlights waveform generation, harmonic analysis, and efficiency evaluation, providing insights into reactive load performance.

Circuit Diagram(s) :



Source/Reference(s) :

- **Title of the paper :** 1-PHASE FULL-WAVE INVERTER WITH R-L LOAD
- **Name of the journal/publication :** N/A
- **Author(s) :** Dr Ashish Shrivastava , Vikas Singh Bhadoria
- **Chapter volume pages :** N/A
- **Link:** https://download.tek.com/courseware/1Ph_FW_Inverter_R-L_Load.pdf